

REMARKS

Claims 1 – 26 remain pending in the present application.

Rejections of the Claims Under 35 U.S.C. § 102(e) and 35 U.S.C. § 103(a)

Claims 1 – 25 are rejected under 35 U.S.C. § 102(e) as being anticipated by Tamer et al. (U.S. Patent No. 6,938,059, hereinafter “Tamer”). Claim 26 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Tamer in view of Agarwalla (U.S. Application No. 2003/0061278). Applicant respectfully traverses these rejections and requests reconsideration in view of the following remarks.

Claim 1 recites:

1. A method to map a storage environment data object, comprising:
receiving a reference to the data object in a first storage environment,
wherein the data object resides in a second storage environment;
generating a first data structure from the reference representing one or more physical locations of the data object within the second storage environment;
associating a signature with the data object, wherein the signature is indicative of a state of the data object;
retaining the first data structure in the first storage environment;
updating the signature to reflect a change in the state of the data object, wherein a determination to update the signature is performed in the second storage environment;
querying the second storage environment for a change to the signature in preparation for a data access operation on the data object;
updating the first data structure if the signature has changed; and
performing the data access operation using the first data structure to interface with one or more of the physical locations of the data object from the first storage environment.

Applicant respectfully submits that Tamer does not teach or suggest a method comprising “updating the signature to reflect a change in the state of the data object, wherein a determination to update the signature is performed in the second storage environment” in combination with the remaining features of claim 1. The Final Office Action asserts that Tamer’s host computer mapping layer 220 and physical space 230 are

respectively equivalent to Applicant's first storage environment and second storage environment. The Final Office Action cites col. 4, lines 46 – 64 and Fig. 10 of Tamer as teaching metadata 320 which is asserted to be equivalent to Applicant's signature indicative of a state of the data object. However, in the cited passage and throughout Tamer, there is no teaching or suggestion that a determination to update the metadata 320 (stored at the host computer) is performed in the second storage environment (i.e., as argued by the Final Office Action, Tamer's physical space 230). The Final Office Action also cites col. 17, lines 5 – 60 of Tamer as disclosing an intelligent storage device 740 capable of performing an additional mapping between the mapping layer 220 and the physical space 230. Again, however, there is no teaching or suggestion in Tamer that a determination to update the metadata 320 stored at the host computer is performed in the second storage environment (i.e., as argued by the Final Office Action, Tamer's physical space 230) of the intelligent storage device 740.

Furthermore, Applicant respectfully submits that Tamer does not teach or suggest a method comprising “querying the second storage environment for a change to the signature in preparation for a data access operation on the data object” in combination with the remaining features of claim 1. In addressing this limitation of claim 1, the Final Office Action cites col. 22, line 44 through col. 23, line 13 and Fig. 12 of Tamer. At the cited locations, Tamer discloses querying a storage device for internal structure information, such as the mapping of a logical volume address to the corresponding physical blocks on the storage device. However, this internal structure information does not relate to a signature which was associated with a data object and which is indicative of a state of the data object. This internal structure information does not relate to Tamer's metadata 320, maintained at the host computer, which is asserted by the Final Office Action to be equivalent to the signature of Applicant's claim 1. Additionally, this internal structure information does not relate to a change in such a signature.

Applicant also respectfully submits that Tamer does not teach or suggest a method comprising “updating the first data structure if the signature has changed” in combination with the remaining features of claim 1. In addressing this limitation of claim 1, the Final

Office Action cites col. 14, lines 10 – 29 and 33 – 38 of Tamer. However, in the cited passages, Tamer discloses updating the number of mapping layers (lines 10 – 29) or adding a new mapping layer (lines 33 – 38). Tamer does not teach or suggest updating a first data structure which represents one or more physical locations of the data object within the second storage environment, nor does Tamer teach or suggest updating the first data structure if a signature indicative of a state of the data object has changed.

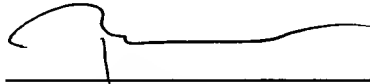
Therefore, Applicant respectfully submits that claim 1 is patentably distinct from the cited references. For similar reasons, Applicant submits that independent claims 9, 15, and 21 are patentably distinct from the cited references. Applicant also respectfully submits that numerous ones of the dependent claims recite further distinctions over the cited references. However, since the independent claims have been shown to be patentably distinct, a further discussion of the remaining dependent claims is not necessary at this time. Accordingly, withdrawal of the § 102(e) and § 103(a) rejections of claims 1 – 26 is respectfully requested.

CONCLUSION

Applicant submits the application is in condition for allowance, and an early notice to that effect is requested.

If any fees are due, the Commissioner is authorized to charge said fees to Meyertons, Hood, Kivlin, Kowert, & Goetzel, P.C. Deposit Account No. 501505/5760-16700/BNK.

Respectfully submitted,



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Date: February 14, 2007